AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-13 (Canceled)

14. (New) A method for processing concentrates produced from copper sulfide-containing ores, comprising:

concentrating a copper sulfide-containing ore to form a first concentrate and a second concentrate separate from the first concentrate, wherein:

the first concentrate contains mainly components that are poorly soluble in a leaching solution, and contains sulfide-form iron, and

the second concentrate contains mainly components that are well soluble in the leaching solution, and is different from the first concentrate;

leaching the second concentrate in the presence of a leaching solution containing an acid, neutralizing the resulting solution, and precipitating iron from the resulting solution to form a leaching product solution;

converting the first concentrate and the leaching product solution in a series of at least two conversion steps to form a converted solution, comprising:

a first conversion step, comprising reacting copper contained in the leaching product solution with sulfide-form iron in the first concentrate to form copper sulfide and a converted solution, removing copper sulfide, and returning at least a

portion of the converted solution from the first conversion step to the leaching of the second concentrate.

15. (New) The method of claim 14, wherein the components that are poorly soluble in a leaching solution comprise precious metals contained in the copper sulfide-containing ores.

16. (New) The method of claim 14, wherein the first concentrate comprises chalcopyrite ($CuFeS_2$) and wherein the second concentrate contains pyrite (FeS_2).

17. (New) The method of claim 14, wherein converting the first concentrate and the leaching product solution further comprises a second conversion step, comprising reacting one or more dissolved metals different from copper with sulfide-form iron in the first concentrate to form the corresponding metal sulfides.

18. (New) The method of claim 17, wherein the one or more dissolved metals comprise zinc, lead, or a combination thereof.

19. (New) The method of claim 14, wherein the leaching of the second concentrate is atmospheric leaching at a temperature of 50 °C - 105 °C.

20. (New) The method of claim 14, wherein the leaching of the second concentrate is autoclave leaching.

21. (New) The method of claim 14, wherein the converting of the first concentrate and the leachate solution is carried out at a temperature of 90 °C - 200 °C.

22. (New) The method of claim 21, wherein the converting of the first concentrate and the leachate solution is carried out at a temperature of 150 °C - 190 °C.

23. (New) The method of claim 14, wherein the sulfide-form iron in the first conversion comprises chalcopyrite ($CuFeS_2$).

24. (New) The method of claim 17, wherein the sulfide-form iron in the second conversion comprises troilite (FeS).

25. (New) The method of claim 17, wherein the sulfide-form iron in the second conversion comprises pyrrhotite ($Fe_{1-x}S$).

26. (New) The method of claim 14, wherein the concentrating of the copper sulfide-containing ore comprises a flotation process.

27. (New) The method of claim 26, wherein the flotation process is controlled using mineral-specific electrochemical measurements.

28. (New) The method of claim 14, wherein the leaching of the second concentrate is controlled using mineral-specific electrochemical measurements.

29. (New) The method of claim 14, wherein the converting of the first concentrate and the leachate solution is controlled using mineral-specific electrochemical measurements.

30. (New) The method of claim 15, wherein the precious metals are recovered in the first conversion.